CTN Test Report
91-023

CALS TEST NETWORK

FIELD TESTING OF PHASE I DA PROCEDURES TEST ANALYSIS REPORT

DTIC QUALITY INSPECTED 4

31 March 1992

Prepared for

Air Force Materiel Command

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31 March 1992

FIELD TESTING OF PHASE I DATA ACCEPTANCE (DA) PROCEDURES

TEST ANALYSIS REPORT

11 September 1990

DSREDS - AVSCOM Site
St. Louis, MO

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Contents

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1.   Introduction

1.1   Background

The DOD Computer-aided Acquisition and Logistic Support (CALS) Test Network (CTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The CTN is a DOD-sponsored confederation of voluntary participants from industry and government managed by the Air Force Logistics Command.

The primary objective of the CTN is to evaluate the effectiveness of the CALS standards (Standards) for technical data interchange and to demonstrate the technical capabilities and operational suitability of those Standards. Two general categories of tests are performed to evaluate the Standards, formal and informal. Formal tests are large, comprehensive tests that follow a written test plan, require specific authorization from DOD, and may take months to prepare, execute, and report.

Informal tests are quick and short, taking only a few hours to set up and execute. They are used by the CTN technical staff to broaden the testing base by including representative samples of the many systems and applications used by CTN participants. They also allow the CTN staff to gain feedback from many industry and government interpretations of the Standards, to increase the base of participation in the CALS initiative, and to respond, in a timely manner, to the many requests for help that come from participants. Participants take part voluntarily and are benefited by receiving an evaluation of their latest implementation (interpretation) of the Standards, interacting with the CTN technical staff, gaining experience in use of the Standards, and developing increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2   Purpose of the Test Analysis Report

This report involves two types of Department of Defense (DoD) engineering data

repositories: the Army's Digital Storage and Retrievel Engineering Data System

(DSREDS) and the Air Force's Engineering Data Computer-Assisted Retrievel System

(EDCARS).

The Test Analysis Report for Task Assignment 90-006 is written to fulfill the following objectives:

   a. To document the results of test plan execution at DSREDS - AVSCOM, St. Louis, MO.

   b. To gather user opinion of the proposed DSREDS/EDCARS site digital data acceptance/quality

   assurance procedures.

   c. To provide a basis for corrective and follow-up action for any deficiencies encountered.

1. 3   Organization of the Test Analysis Report

The Test Analysis Report is divided into three major sections: Section 1 states the purpose of this report,

provides references to documents relevant to this report and identifies the test participants; Section 2 provides

an analysis of the test results obtained during implementation of the Test Plan; and Section 3 summarizes the

demonstrated capability and deficiencies of the tested DSREDS/EDCARS site digital data acceptance/quality

assurance procedures and provides a list of refinements that are to be incorporated into the procedures.

1. 4   Project References

The following documents are applicable:

   a. Task Execution Plan No. 90-006: 1990 Phase II Data Acceptance and Quality Assurance.

   b. DSREDS/EDCARS Site - Digital Data Acceptance/Quality Assurance Procedures: 9 February 1990

   (revised 30 March 1990)

   c. Test Plan - Digital Data Acceptance/Quality Assurance Procedures: 23 February 1990

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L 5   Test Participants

Accurate - M. Sligh

AVSCOM - E. Beard

L 6   Test Observers

PM CALS - R. Mitchell

Accurate - D. White, G. Diamond

AVSCOM - P. Beherns, D. Phillips

CTNO - F. Tittle

1. 7   Test Site

The DSREDS site visited was:

SITE	DATE
AVSCOM, St. Louis, MO	11 September 1990

TEST ANALYSIS REPORT

2. TEST ANALYSIS

The tests described in Section 4.2 of the Test Plan (see Section 1.3 (c) of this report) were conducted at the AVSCOM DSREDS site. The tests did not cover the two new procedures, Procedure 1 - Government Contract Preparation - Digital Engineering Drawing Data, and Procedure 2 - Government Conduct Final Reviews - Engineering Drawing Package (EDP), that were added in the 30 March 1990 revision of the DSREDS/EDCARS Site Digital Data Acceptance/Quality Assurance Procedures. The procedures tests begin at procedure 3. The results of these tests, along with discussions and analyses, are presented in the paragraphs that follow. The results, discussion and analyses are presented on a procedure-by-procedure basis.

2.1 Test of DSREDS/EDCARS Site Procedure 3

The purpose of this test was to validate that Procedure 3 of the DSREDS/EDCARS Site Digital Data Acceptance/Quality Assurance Procedures was adequate for performing physical acceptance of magnetic tape.

2.1.1 Results: Test of DSREDS/EDCARS Site Procedure 3

This test was conducted in a walk-through fashion. The Packing Slip, Data Acceptance Sheet, Document Identifier Report and MIL-STD-1840A packaging method were examined. The following comments were made:

    a. CAGE codes should be included on all forms.

    b. With the exception of the signature line for the on-site government representative, the shipping list currently used contains the information proposed in the Packing Slip, Data Acceptance Sheet and Document Identifier Report.

    c. The Packing Slip, Data Acceptance Sheet and Final Acceptance Sheets should be merged into one document.

    d. The Document Identifier Report should be automated. The preferred media would be 9-track tape.

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2.1.2   Discussion and Analysis: Test of DSREDS/EDCARS Site Procedure 3

In response to comments (a), (b) and (c), a new document that incorporates the information found in the Packing Slip, Data Acceptance Sheet and Final Acceptance Sheet should be developed in order to reduce the number of reports that must be handled. It is suggested that the Phase II procedures implement these suggested changes.

In response to comment (d), delivering the data found in the Document Identifier Report in digital form (9-track tape) would ease automating some of the quality assurance procedures and should be considered for implementation within the computer-assisted Phase II Data Acceptance procedures.

2.2   Test of DSREDS/EDCARS Site Procedure 4

The purpose of this test was to validate that Procedure 4 of the DSREDS/EDCARS Site Digital Data Acceptance/Quality Assurance Procedures is adequate for performing conversion of incoming 1840A/28002 tape to DSREDS/EDCARS format.

2.2.1   Results: Test of DSREDS/EDCARS Site Procedure 4

This procedure is not currently in use because the means of performing 1840A/28002-to-DSREDS/EDCARS Tape format conversion is not currently available. However, the following comment was made: the conversion report could be compared electronically with the Document Identifier Report and exceptions reported. The proposed Conversion Report could be combined with the current ISR 26000 report.

TEST ANALYSIS REPORT

2.2.2   Discussion and Analysis: Test of DSREDS/EDCARS Site Procedure 4

Once the method of conversion is established, methods for electronically comparing the conversion report with the Document Identified Report should be developed.

2.3   Test of DSREDS/EDCARS Site Procedure 5

The purpose of this test is to validate that Procedure 5 of the DSREDS/EDCARS Site Digital Data Acceptance/Quality Assurance Procedures is adequate for performing population of DSREDS/EDCARS databases.

2.3.1   Results: Test of DSREDS/EDCARS Site Procedure 5

It was suggested that paragraph 4.5(d) of the DSREDS/EDCARS Site Digital DA/QA Procedures be deleted. That paragraph addressed the preparation of a Population Acceptance Sheet.

2.3.2   Discussion and Analysis: Test of DSREDS/EDCARS Site Procedure 5

Since the Database Population Report could be compared electronically with the Document Identifier Report, and the exceptions reported, the need to produce the Population Acceptance Sheet for manual inspection is no longer needed.

2.4   Test of DSREDS/EDCARS Site Procedure 6

The purpose of this test is to validate that Procedure 6 of the DSREDS/EDCARS Site Procedures is adequate for performing visual validation of image and key identification data.

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2.4.1   Results: Test of DSREDS/EDCARS Site Procedure 6

It was suggested that paragraphs 4.6.2 (c), (d) and (e) of the DSREDS/EDCARS Site Digital DA/QA Procedures be deleted. These paragraphs addressed border existence image skew and line separation.

2.4.2   Discussion and Analysis: Test of DSREDS/EDCARS Site Procedure 4

Paragraphs 4.6.2 (c) and (d) should be deleted because a drawing could be both legible and reproducible and yet be skewed on without a border. Paragraph 4.6.2 (e) is redundant because it is covered in 4.6.2 (b).

2.5   Test of DSREDS/EDCARS Site Procedure 7

The purpose of this test is to validate that Procedure 7 of the DSREDS/EDCARS Site Digital Data Acceptance/Quality Assurance Procedures is adequate for performing final acceptance.

2.5.1   Results: Test of DSREDS/EDCARS Site Procedure 7

The following comments were made:

a.   The letter referred to in paragraph 4.7 should be a "contract letter".

b.   The Final Acceptance Sheet should be merged with the Packing Slip and Data Acceptance Sheet.

2.5.2   Discussion and Analysis: Test of DSREDS/EDCARS Site Procedure 7

In response to comment (a), paragraph 4.7 should be revised so that "letter" is replaced with "contract letter" because the Contracting Officer is the final authority for acceptance.

In response to comment (b), the Final Acceptance Sheet, Packing Slip and Data Acceptance Sheet should be merged into a document. This single document would then track the digital data from the loading dock to final acceptance at the receiving site.

TEST ANALYSIS REPORT

3.   SUMMARY AND CONCLUSIONS

The five (5) principal procedures were tested in depth, using the test plan to record the results and the test

procedures in conducting the testing. The testing went very well and in general, the procedures were found to

be acceptable. A few key recommendations were made that integrated some of the forms to reduce the paper

required to record the acceptance of the data. It was recommended that:

1.   The Packing List and Data Acceptance Sheet be combined and expanded in to include space

        for final acceptance sign offs thereby eliminating the final acceptance sheet also.

2.   The Conversion Acceptance Sheet and the Database Population Acceptance Sheet be eliminated

        if and when the comparisons are made electronically. (Computer Assisted techniques)

3.   The Document Identifier Report "batch data" be delivered on 9-track m agnetic tape, loaded

        into the system   when batch data is converted that the key data fields be compared within

        the computer and a computer report be prepared showing the results.

4.   When the TIF Database Population Report (DSREDS/EDCARS ISR 26000) is prepared, it

        will show any difference between it and the delivered Magnetic Tape batch identification "Key

        Field" data if it exists.

These suggestions are presently being considered for incorporation into the Phase II Computer Assisted DA

Procedures. Additional comments were made by AVSCOM that related to the test plan steps but did not impact

the procedures.